

THE NAVIGATOR

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Biomass Power: An Electrifying New Opportunity for Corporate Real Estate

Introuction

We have previously written about green initiatives adopted and applied throughout the Glastonbury Capital portfolio. Energy efficient lighting, reduction of landfill waste through recycling, improvements to leaky compressor systems, and the introduction of eco-friendly cleaners and supplies are worthwhile steps toward responsible sustainability and enduring cost savings. Our initial efforts to embrace green practices have evolved to a new understanding of the industrial park, as well, and to a sustainable revolution in the way that power is harnessed by some highly innovative American companies. There is a biomass revolution occurring in industrial and corporate real estate; and in this edition of THE NAVIGATOR, we are pleased to share with you this new trend to better understand what is coming.

What is Biomass Power?

Biomass power is carbon neutral electricity generated from renewable organic waste, including scrap lumber, forest debris and agricultural waste. Electrical power from biomass sources is derived when organic matter is used as fuel to generate steam. Most typically, woody biomass harvested from the forest or cultivated as fast growing crops, or sustainable grass crops like switch grass, are used as fuel, but any carbon-based feed stock can work. For example, a few companies in farm-belt areas have developed biomass power plants at turkey farms and are using pelletized animal waste for fuel. There are two types of biomass plants typically used today: direct combustion (high heat generated by fire and representative of an older, some might say, more reliable technology) and gasification (molecular changes in fuel sources occur during a long, slow baking process and represented by a newer breed of applied technologies.)

The availability of federal credits is driving a renewed emphasis on the development of biomass power plants. Beginning primarily with the oil embargo of the 1970s, utilities began the first and last wave of biomass power development. Direct combustion plants were located in rural areas in close proximity to wood sources (commonly referred to in the industry as “wood baskets”.) Today, there is a new rush to develop sustainable power due primarily to statutory mandates required by the states and renewable tax credits available from the federal government. The Biomass Power Association (www.usabiomass.org) reports that it has 80 members from 20 states.

There are many advantages to developing biomass power, including cost savings and energy independence, but the big appeal is that it generates carbon neutral electricity¹. As noted by the United States

¹ There is a strong, ongoing and very lively debate between the industry and environmentalists as to whether biomass power is truly carbon neutral. The Federal government has not provided clarity outside the EPA statement quoted

Environmental Protection Agency, “The CO2 emitted from biomass-based fuels combustion does not increase atmospheric CO2 concentrations, assuming the biogenic carbon emitted is offset by the uptake of CO2 resulting from the growth of new biomass.”² The California Public Utilities Commission sites benefits past CO2 neutrality by reporting a substantial net reduction in greenhouse gas emissions: “The record shows that electric generation using biomass that would otherwise be disposed of under a variety of conventional methods (such as open burning, forest accumulation, landfills, composting) results in a substantial net reduction in GHG emissions.”³

A New Perspective for Old Industrial Parks

Over the course of the last 18 months, we have found ourselves deeply enmeshed with biomass power companies, and their related suppliers and operational partners, seeking to develop new projects. At one very large, closed industrial site located in the Upper Midwest, Glastonbury Capital is working with multiple biomass providers who hope to breathe new life into a shuttered manufacturing plant by addressing existing environmental challenges, adaptively reusing vacant building stock, and promoting a plan for the development of an eco-industrial park centered around sustainable, carbon neutral biomass power generation. The reuse of more than 500,000 square feet of heavy industrial space situated on nearly 1,000 acres will provide the opportunity for multiple companies to connect to the new power source and receive discounted power and steam. In turn, waste wood from the manufacturing processes will be used as feedstock for the approximate 25 megawatt biomass power plant.

The ramifications of this model could have significant impact on the redevelopment of old, even vacant, industrial properties. As heavy industrial manufacturing continues to emigrate from the United States and Western Europe to lower cost production locations, and exacerbated by the dismal state of the world economy today, vacant industrial sites represent a real challenge to local communities, and may be a new opportunity for savvy developers. Biomass power represents a new tool to for the development of old plants. Low cost power, generated on site, can be made available to tenants and park occupants at reduced levels. A generally lower basis in the property serves as an additional comparative advantage in offering below market rental rates.

While it is not a solution for every vacant industrial site, it could be the spark for some rural communities suffering from high levels of unemployment. Three things are needed to make biomass power a reality: (1) a wood supply; (2) a power purchase agreement from a utility company; and (3) access to the electric grid. While these each represent unique challenges, they can be overcome. We believe this is a tool that should be considered as communities and developers seek to redevelop closed, vacant industrial properties.

Implications for Corporate Real Estate Managers: **The Dow Experience**

Biomass is embraced by one of America’s leading Fortune 100 companies that is taking the drive to go green to an entirely new shades, and in so doing is realizing significant operational savings and energy independence. Dow Chemical Company (www.dow.com) is quickly moving to become a major innovator in sustainable, on-site power generation. The company is embracing the use of biomass power at plants located around the globe. It is taking the generation of electrical power into its own hands with on-site, sustainable generation.

here. From a policy perspective, it is unclear how the U.S. Government will choose to define biomass power long term.

² The United States Environmental Protection Agency, 74 Fed. Reg. 24,904 25,039 (May 26, 2009)

³ California Public Utilities Commission, January 2007, Decision 07-01-039

Dow announced on December 1, 2010 that it will be adding biomass power generation to its largest manufacturing plant located in Brazil. By the end of 2012, the facility will be processing biomass power for electrical generation. The chemical company said the plant, called the Aratu Complex, will start burning Eucalyptus wood biomass to power its chemical processing facilities and will reduce the site's carbon dioxide emissions by 180,000 metric tons annually.

The broader market took notice. On the day the company went public with the announcement, shares of Dow rose \$1.02, or 3%, to \$32.20.

Closer to home in the United States, Dow Corning (www.dowcorning.com) announced this year that it is moving forward with the installation of a biomass powered energy facility to provide renewable, reliable, and cost-effective supply of steam and electricity necessary to fuel its Midland, Michigan corporate headquarters and manufacturing site. According to Jim Smith, Dow Corning Midland site manager, "Biomass would offer our site the long-term, cost effective and renewable supply of steam and energy we need as we continue to invest and grow our Midland operations."

The biomass energy plant is being constructed adjacent to the manufacturing facility. Power will be produced by gasification of plant-derived organic matter. As described by the company, this will "release the sun's energy these material contain. In this way, biomass functions as sort of a natural battery for storing solar energy. As long as biomass is produced sustainably, the energy source is completely renewable." The biomass facility will initially use waste wood chips obtained from existing forest harvesting, mills, as well as dead trees. In the future, it is believed that renewable biomass crops will be cultivated and harvested to fuel the plant. The gasification technology employed includes specialized emissions controls to provide the lowest possible air emissions, and is subject to ongoing state and federal review and authority.

Conclusion

At Glastonbury Capital, we believe there is a significant new opportunity for real estate developers and corporate real estate managers. New life can be breathed into old plants using the biomass power tool. Dow Chemical and Dow Corning believe it. They have facilitated the investment of hundreds of millions of dollars into operational facilities to drive down costs and to ensure long term price stability, while saving the environment from the polluting effects of carbon dioxide emissions. As technology continues to improve, we will continue to see new uses and applications for this powerful new trend in industrial and corporate real estate.

Happy Holidays from Glastonbury Capital

As the year draws to a close, we wish you and your families a peaceful Holiday Season and healthy New Year. We look forward to new opportunities in 2011; and remain hopeful that we will work together again with old friends and meet some new. As always, you can learn more about Glastonbury Capital LLC through our website at www.glastonburyllc.com.

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